Desktop Video Technology

http://zeus.arc.nasa.gov

Steve N. Kyramarios
skyramarios@mail.arc.nasa.gov
Tel: (650) 604-4950
Fax: (650) 604-6999

Agenda

- Overview of ARC Desktop Video Project - Steve Kyramarios
- Compression and Advanced Applications - Dr. John McGowan
- Product Evaluation and Interoperability Testing - Mike Fitzjarrell

Project Objectives

- Establish desktop video standards for the Agency to ensure interoperability, scalability and efficient migration paths
- Provide technical input and strategic direction to the NASA CIOs, PCCA and the BOB team.
- Perform advanced applications research and development in desktop video technologies such as compression algorithms, effects related to human factors, and connectivity/distribution of video related applications

Approach

- Identification of protocol to help ensure interoperability between products and platforms
- Identification of standard compliant products
- Evaluation of vendor solutions (based on evaluation criteria document)
- Interoperability testing to ensure standards compliance
- Endorse product providing “evaluation criteria” and interoperability testing is satisfactory

Recommendations

- **Standard**
  - ITU-T H.323 Standard approved for Desktop Conferencing
- **H.323 Clients**
  - PictureTel LiveLan
  - Microsoft NetMeeting
  - VCON Cruiser Series
  - Intel Business System
- **H.323 Multipoint Controllers**
  - PictureTel NetConference

Streaming Video

- **Solutions in review**
  - Real Media

    Live and on-demand, hi-fi sound with eq. control, picture quality control, and scan, preset, and record controls

  - Microsoft NetShow

    Live and on-demand, auto codec download, support for broadcast quality video on high bandwidth networks

  - ICAST

    Mbone client for the PC (beta Macintosh viewer), broadcaster, Recorder, relay, and metering.

Research & Development

- **Compression Technology**
  - Joint support for DCTune (JPEG helper application)
  - Comparison between DCT, Wavelet and Fractal based compression algorithms
  - Digital Video Quality (objective visual quality measurement)
- **Networking**
  - Multicasting via the Mbone i.e. NASA TV and STS Missions
  - Performance evaluations of H.323 over NREN

Future Work

- **Standards**
  - Continue H.323 product evaluations and interoperability testing
  - Continue working with Agency Communication Teams to ensure proper Desktop Video representation

- **Research and Development**
  - Support for DCTune (bug fixes and MJPEG migration)
  - Continue compression research
  - Drive LAN multicast implementation
  - Continue product testing over NREN/NGI